




undefined

Standard version.

COVID-19 epidemiology update: Testing and variants

Last updated: 2024-02-27  PDF

Summary of COVID-19 cases, hospitalizations and deaths, cases following vaccination, testing and variants of concern across Canada and over time. Older versions of this report are available on the [archived reports page](#).

Update schedule: We update all sections of this page every Tuesday. This page was last updated on February 27, 2024, 9 am ET.

Testing in Canada

For information on other respiratory viruses circulating in Canada, and comparisons with COVID-19, please visit the [weekly RVDSS report](#), and the [weekly Fluwatch report](#).

Key COVID-19 testing updates (Last data update February 27, 2024, 9 am ET)

Weekly tests reported

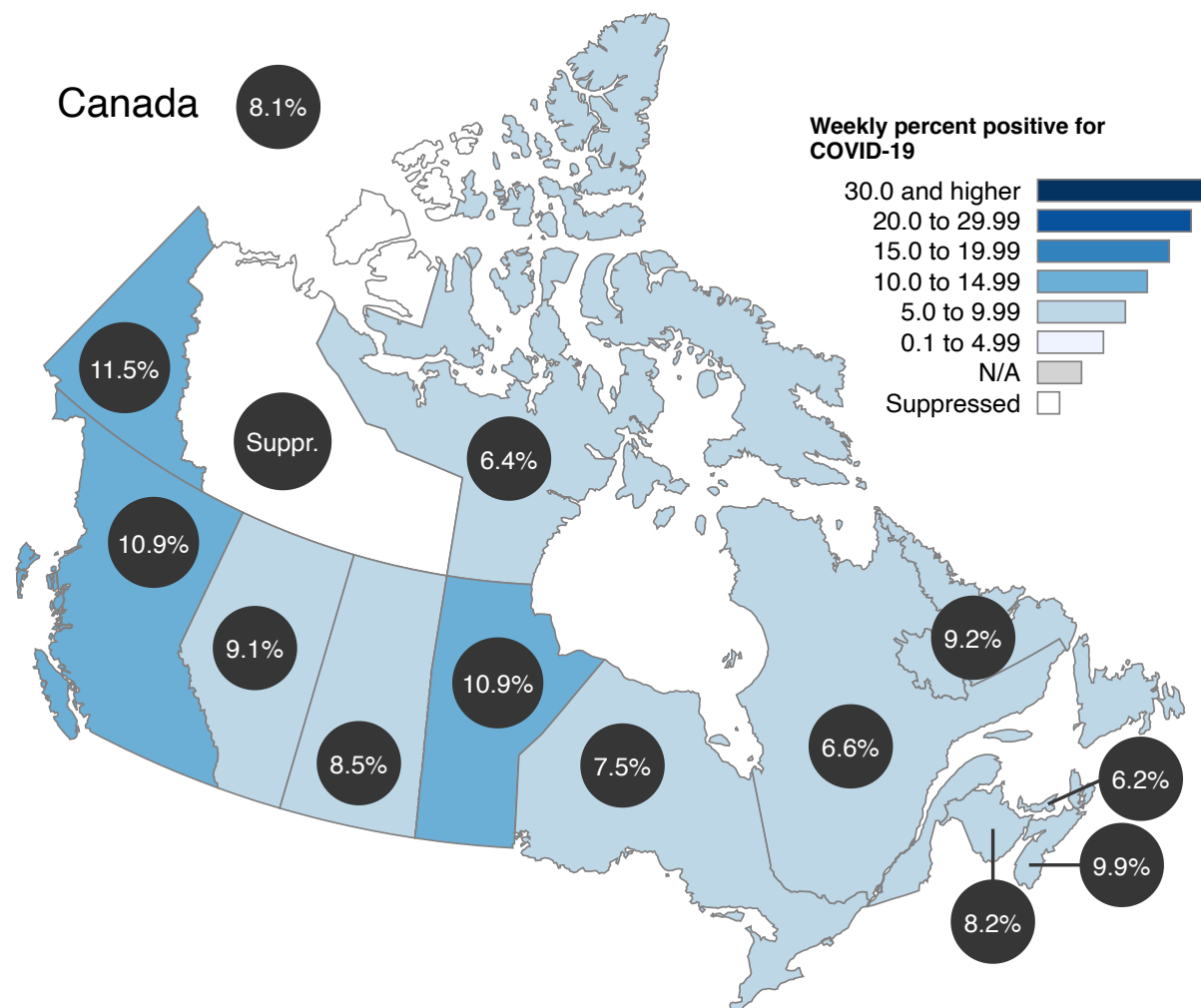
33,895

Weekly percent positivity

8.1%

- Laboratory testing information is based on data from the Respiratory Virus Detection Surveillance System (RVDSS) (see [Data notes](#)).
- Weekly percent positivity is calculated as the number of positive tests divided by the total number of tests performed during the epidemiological week.
- Laboratory data represents specimens received by labs up to February 17, 2024.
- Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.

Figure 1. weekly percent positive for COVID-19 by select laboratories, by province or territory up to February 17, 2024 (Last data update February 27, 2024, 9 am ET)



The percentage of weekly positive tests up to February 17, 2024 in **Canada** was **8.1%**.

- This information is based on data from the Respiratory Virus Detection Surveillance System (RVDSS) (see Data notes).
- Weekly percent positivity is calculated as the number of positive tests divided by the total number of tests performed during the epidemiological week.
- Interpret the percentage of positive tests with caution when a jurisdiction has only a small number of tests.
- Weekly percent positivity estimates are suppressed (not shown) for the Northwest Territories when the number of weekly COVID-19 tests reported is under 45. For small counts such as this, it is difficult to provide an accurate weekly percent positivity estimate.
- Case counts are under-estimated due to changes in COVID-19 testing policies in many jurisdictions since December 2021.
- The data represent surveillance data available through RVDSS up to February 17, 2024. N.A represents missing data. We update data retroactively when we receive delayed data reports.

Testing in Canada for COVID-19

Location	Weekly tests reported	Weekly percent positive
British Columbia	3,725	10.9%
Alberta	4,776	9.1%
Saskatchewan	1,731	8.5%
Manitoba	1,472	10.9%

Location	Weekly tests reported	Weekly percent positive
Ontario	7,725	7.5%
Quebec	11,084	6.6%
Newfoundland and Labrador	684	9.2%
New Brunswick	1,123	8.2%
Nova Scotia	1,185	9.9%
Prince Edward Island	193	6.2%
Yukon	52	11.5%
Northwest Territories	36	N/A
Nunavut	109	6.4%
Canada	33,895	8.1%

On December 5, 2022, we changed surveillance systems for monitoring laboratory testing of SARS-CoV-2, the virus that causes COVID-19. We now use the Respiratory Virus Detection Surveillance System (RVDSS). Before December 5, we used the System for Analyzing Laboratory Test counts (SALT).

SALT was set up early in the COVID-19 pandemic to monitor daily SARS-CoV-2 testing volumes, and the percent of tests that were positive.

RVDSS is a longstanding surveillance system that collects data from laboratories across Canada on:

- the number of tests performed in participating laboratories and
- the number of positive tests for respiratory viruses

RVDSS mostly collects data from the tests of people who had COVID-19 symptoms or exposures, in order to assess trends in transmission via test positivity. RVDSS allows us to monitor COVID-19 in the context of other respiratory viruses.

The SALT and RVDSS data are not directly comparable.

- RVDSS data on COVID-19 is available starting the week of August 28, 2022 (Week 1 of the 2022/23 influenza season). SALT data are available starting February 1, 2020.
- Test positivity is higher in RVDSS than SALT. This is because tests reported to RVDSS are usually collected for clinical investigations, meaning people with symptoms or exposure to COVID-19, resulting in a higher proportion of positive tests.
- RVDSS presents all data by epidemiological week, while SALT presented daily data. [Historical SALT testing data is available \(.csv\)](#).

The number of laboratories participating in RVDSS can vary week to week and across provinces and territories. As a result, the numbers of tests performed cannot be directly compared between provinces and territories. The number of tests reported may be used to add context to interpret weekly percent positivity.

For information on other respiratory viruses circulating in Canada, and comparisons with COVID-19, please visit the [weekly RVDSS report](#).

Variants in Canada

All viruses change over time, including SARS-CoV-2, the virus that causes COVID-19 disease. These changes are called **mutations** and viruses with mutations are called **variants**. A percentage of all positive COVID-19 PCR test results in Canada undergo whole genome sequencing. Sequencing tells us which variant is involved in a specific case of COVID-19.

Many variants are being tracked across Canada and around the world. Some variants are classified as:

- variant under monitoring (VUM)
 - is being monitored to assess its mutations and characteristics
- variant of interest (VOI)
 - has mutations or characteristics of interest and is being monitored to see if they pose significant risk to public health
- variant of concern (VOC)
 - has mutations and characteristics that are significant to public health

For detailed definitions, refer to [SARS-CoV-2 variants: National definitions, designations, and public health actions](#).

Occasionally, a person may be infected with 2 different variants at the same time. The genetic material from each variant can mix to form a combined variant, referred to as a recombinant virus. Recombinant viruses inherit the properties of their parents, which can change how the virus behaves. The scientific names of the variants discussed below that start with “X” are known as recombinant variants (for example, XBB.1).

Some viruses evolve quickly, making many variants over time. To simplify tracking, variants are grouped into **lineages**, which are variants that share recent ancestry. For example, variant BA.1 (also known as the original Omicron variant) had several offspring lineages such as BA.1.1 and BA.1.1.1.

i As of March 2023, the World Health Organization (WHO) assigns Greek letters only to VOCs, while VOIs and VUMs are referred to using established scientific nomenclature systems. There are no current VOCs in Canada because Omicron has moved to the “de-escalation” category.

A variant is “de-escalated” once it becomes clear that the variant does not pose an elevated risk to the population or that it is being replaced by newer variants.

Recent variants

This graphic shows the percentage mix of variant lineages detected in Canada through whole genome sequencing over the last 10 weeks. Each week is represented by a bar. The most dominant lineage in each week has the largest block of that week’s bar.

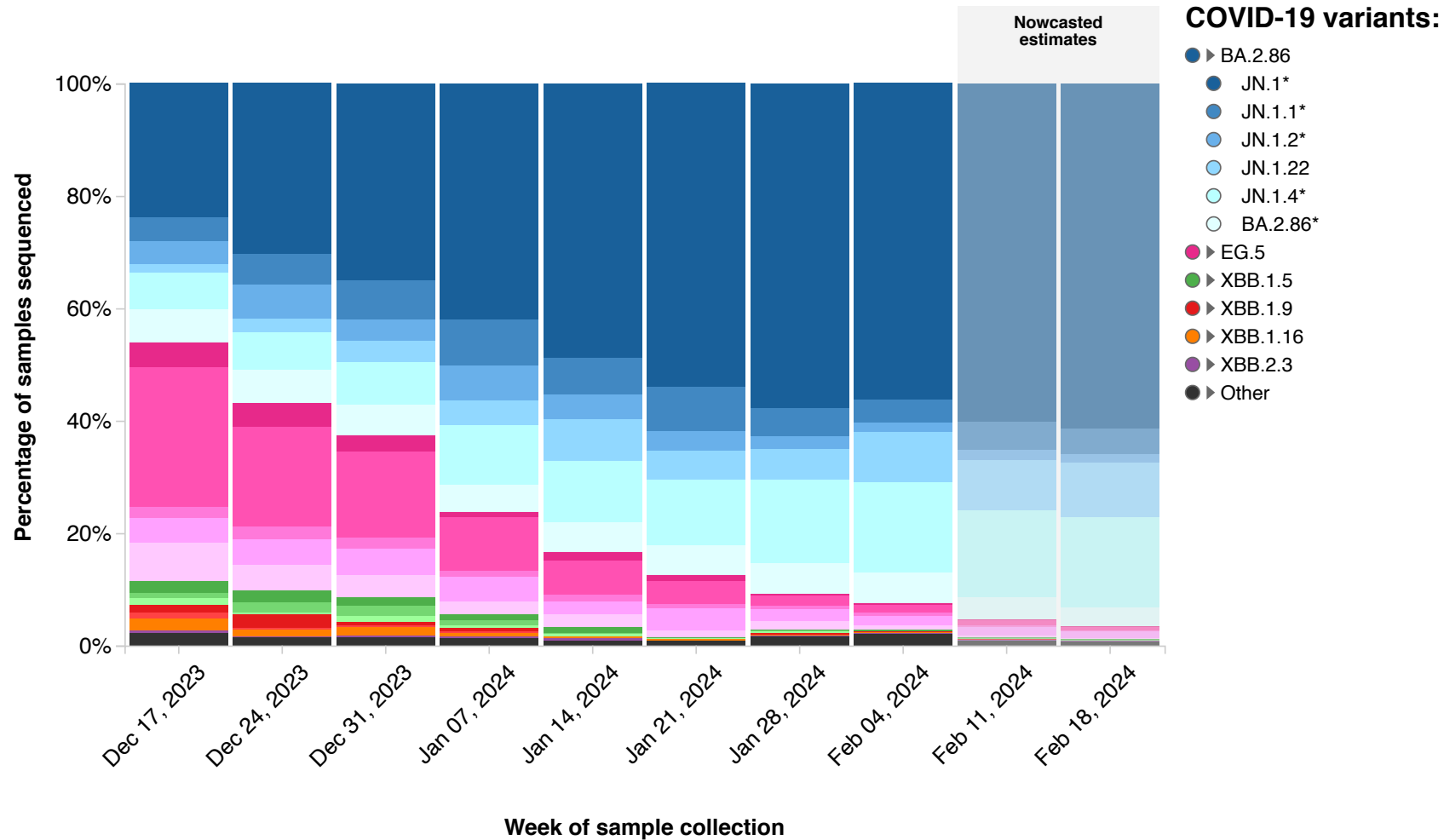
The first 8 weeks of the figure reflect the actual data from the National Genomic Database. The last 2 weeks reflect the **nowcasted estimates**. Nowcasting uses statistical models to estimate the current situation based on earlier trends. It provides estimates for the most recent weeks when the data is still accumulating and is therefore incomplete.

For more detailed information about how nowcasting works, refer to [Nowcasting methods](#).

The numerical values for each lineage are shown in the legend, along with predictive intervals. Predictive intervals are ranges (for example, 16-19%) that indicate the confidence of each estimate. The narrower the range, the more confident we are that the prediction is accurate.

Figure 2. Weekly variant breakdown Updated: February 27, 2024, 9 am ET

i You can see the numbers for each date by hovering over, tabbing to, or long-pressing any of the bars. To see a specific variant or variant grouping, click or press return. Repeat to restore the complete graph. Click on the name of the variant in the legend to reveal or hide any descendants or offshoots.



It takes time to collect, sequence and process viral genomes, so there is often a period of 2 to 3 weeks where data are still being processed. We use a nowcasting model to estimate the current variant proportions for this period.

* Includes all descendant lineages, unless otherwise specified.

† More data is needed to estimate the growth and proportion of this lineage with more certainty.

Important note: When a new lineage first emerges, its detection levels will be too low to include it in the nowcasting model. Once it is included, data will still be limited at first and its growth and overall proportion will be estimated with lower confidence. As data rolls in, the accuracy and precision of the predictions improve and the predictive interval shrinks. During periods of slow data collection, the overall proportions may be skewed and the predictions may be less accurate. Under such conditions, interpret the model projections with caution.

Weekly variant breakdown

Percentage of COVID-19 cases identified through whole genome sequencing, presented by variant and by week of sample collection.

Table 2. Percentage of COVID-19 cases identified through whole genome sequencing, presented by variant and by week of sample collection

Variant grouping	Variant	Dec 17, 2023 (n=1,970)	Dec 24, 2023 (n=2,018)	Dec 31, 2023 (n=1,940)	Jan 07, 2024 (n=1,980)	Jan 14, 2024 (n=1,668)	Jan 21, 2024 (n=1,471)	Jan 28, 2024 (n=1,378)	Feb 04, 2024 (n=1,104)	Feb 11, 2024 Nowcasted estimates [Confidence interval]	Feb 18, 2024 Nowcasted estimates [Confidence interval]
BA.2.86	JN.1*	23.8%	30.3%	34.9%	42.0%	48.7%	54.0%	57.7%	56.3%	60.1% [57.8, 62.2]	61.3% [58.7, 63.9]
	JN.1.1*	4.2%	5.4%	7.1%	8.1%	6.6%	7.7%	5.0%	4.0%	5.0% [4.2, 5.9]	4.5% [3.7, 5.5]
	JN.1.2*	4.1%	6.0%	3.7%	6.3%	4.3%	3.6%	2.4%	1.7%	1.9% [1.6, 2.4]	1.6% [1.2, 2.0]
	JN.1.22	1.5%	2.5%	3.9%	4.4%	7.5%	5.2%	5.4%	9.0%	8.9% [7.5, 10.4]	9.7% [8.0, 11.8]
	JN.1.4*	6.5%	6.6%	7.6%	10.6%	10.9%	11.6%	14.7%	16.0%	15.4% [13.8, 17.0]	15.9% [14.0, 18.0]
	BA.2.86*	6.0%	6.0%	5.3%	4.8%	5.2%	5.4%	5.5%	5.5%	4.0% [3.3, 4.7]	3.5% [2.8, 4.2]
EG.5	HK.3*	4.4%	4.2%	3.0%	0.9%	1.6%	1.0%	0.3%	0.3%	0.2% [0.1, 0.3]	0.1% [0.1, 0.2]
	HV.1*	24.8%	17.7%	15.3%	9.6%	6.2%	4.1%	1.8%	1.4%	0.9% [0.7, 1.1]	0.5% [0.4, 0.7]
	JG.3*	2.0%	2.2%	2.1%	1.0%	1.2%	0.7%	0.6%	0.6%	0.3% [0.2, 0.5]	0.2% [0.1, 0.4]
	JG.3.2	4.5%	4.6%	4.7%	4.3%	2.2%	3.9%	2.1%	1.5%	1.5% [1.1, 1.8]	1.1% [0.8, 1.5]
	EG.5*	6.7%	4.5%	3.9%	2.3%	2.2%	1.3%	1.5%	0.9%	0.5% [0.3, 0.6]	0.3% [0.2, 0.4]
XBB.1.5	JD.1.1*	2.1%	2.2%	1.5%	1.0%	1.1%	0.1%	0.3%	0.2%	0.1% [0.1, 0.2]	0.1% [0.0, 0.1]
	JD.1.1.1	1.0%	1.8%	1.8%	1.0%	0.2%	0.0%	0.1%	0.0%	0.1% [0.0, 0.2]	0.1% [0.0, 0.1]
	XBB.1.5*	1.3%	0.3%	1.1%	0.4%	0.4%	0.1%	0.3%	0.1%	0.1% [0.0, 0.2]	0.0% [0.0, 0.1]
XBB.1.9	KC.1*	1.3%	2.3%	0.7%	0.7%	0.0%	0.1%	0.2%	0.1%	0.0% [0.0, 0.1]	0.0% [0.0, 0.0]
	XBB.1.9*	1.1%	0.3%	0.2%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0% [0.0, 0.1]	0.0% [0.0, 0.0]

Variant grouping	Variant	Dec 17, 2023 (n=1,970)	Dec 24, 2023 (n=2,018)	Dec 31, 2023 (n=1,940)	Jan 07, 2024 (n=1,980)	Jan 14, 2024 (n=1,668)	Jan 21, 2024 (n=1,471)	Jan 28, 2024 (n=1,378)	Feb 04, 2024 (n=1,104)	Feb 11, 2024 Nowcasted estimates [Confidence interval]	Feb 18, 2024 Nowcasted estimates [Confidence interval]
XBB.1.16	XBB.1.16*	2.0%	1.2%	1.6%	0.8%	0.3%	0.2%	0.1%	0.2%	0.1% [0.0, 0.1]	0.0% [0.0, 0.1]
XBB.2.3	XBB.2.3*	0.5%	0.2%	0.2%	0.3%	0.4%	0.1%	0.1%	0.1%	0.1% [0.0, 0.2]	0.1% [0.0, 0.2]
Other variants	Other	2.3%	1.4%	1.5%	1.3%	0.8%	0.8%	1.7%	2.2%	0.9% [0.6, 1.3]	0.8% [0.5, 1.2]

* Includes all descendant lineages, unless otherwise designated.

† The growth rate of this lineage is likely to decrease once more data accumulates.

Contributing laboratories

- National Microbiology Laboratory (NML) - supplemental sequencing for all provinces and territories

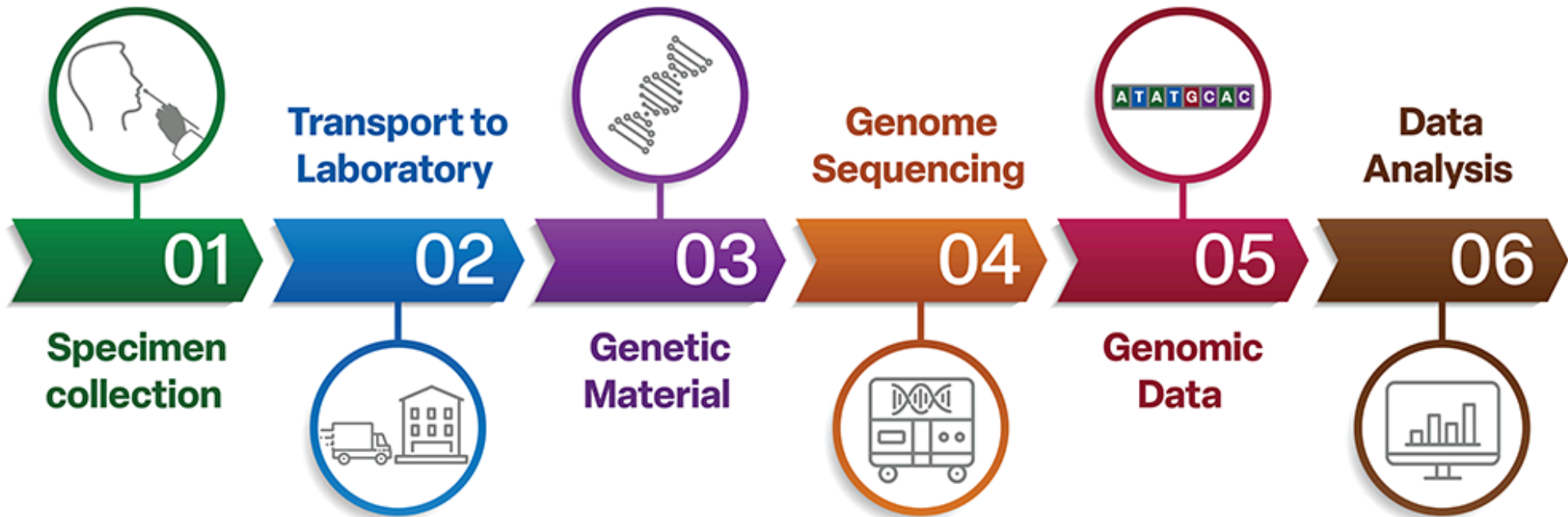
How Canada sequences SARS-CoV-2 genomes

Canada has a strong viral genomic sequencing program. Public health authorities across the country collect and analyze PCR-based test samples to identify the variant involved in each sample.

Samples are taken and tested from people suspected of having COVID-19. The material from the positive tests is sent to the laboratory, where the viral genetic material, or ribonucleic acid (RNA), is extracted. A specimen is prepared and run through a sequencing machine. The sequencing machine identifies the nucleotide bases present in the RNA sequence. This results in strings of letters that are stitched together to give the genetic code of the specimen’s variant. The genetic code of the virus is used to classify and name the variant.

Viral sequences also shows us which variants are in Canada, how they are spreading, and whether the genetic changes are impacting public health.

Figure 3. How Canada sequences SARS-CoV-2 genomes

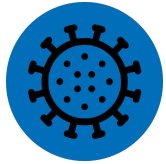


The diagram shows how Canada sequences SARS-CoV-2 genomes in six steps.

- Step 1: Specimen collection
- Step 2: Transport to laboratory
- Step 3: Genetic material
- Step 4: Genome sequencing
- Step 5: Genomic data

- Step 6: Data analysis

You might also be interested in



COVID-19 wastewater surveillance dashboard

Trend data about the levels of COVID-19 in the wastewater.



COVID-19 vaccination

Number of COVID-19 vaccine doses that have been administered in Canada.

[All Health Infobase data products](#)

Did you find what you were looking for?

What was wrong?

Answers to frequently asked questions can be found in the [Understanding the data section!](#)

- ☐ The answer I need is missing
- ☐ The information isn't clear
- ☐ I'm not in the right place
- ☐ Something is broken or incorrect
- ☐ Other reason

Please provide more details

(Don't include any personal information. Note that you will not receive a reply.)

Maximum 300 characters

Date modified:

2024-02-27

Health Infobase

Contact us by email

Government of Canada

All Contacts

Departments and agencies

About government

Jobs

Immigration and citizenship

Travel and tourism

[Business](#)

[Benefits](#)

[Health](#)

[Taxes](#)

[Environment and natural resources](#)

[National security and defence](#)

[Culture, history and sport](#)

[Policing, justice and emergencies](#)

[Transport and infrastructure](#)

[Canada and the world](#)

[Money and finance](#)

[Science and innovation](#)

[Indigenous peoples](#)

[Veterans and military](#)

[Youth](#)

[Social media](#) • [Mobile applications](#) • [About Canada.ca](#) • [Terms and conditions](#) • [Privacy](#)

Canada 